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VARIABILITY OF BODY DENSITIES OF BIRDS AND ITS RELEVANCE TO DAMAGE TO AIRCRAFT

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Abstract: Body density, mass, wingspan, and circumference measurements were completed on 12 bird species for use in bird/aircraft collision studies. Body densities differed ($P < 0.017$) among the 12 species, ranging from 0.602 - 0.918 g/cm^3 with feathers intact and from 0.880 - 1.050 g/cm^3 with feathers removed. Gulls (Larus spp.), waterfowl and turkey vultures (Cathartes aura) were among the least dense species whereas European starlings (Sturnus vulgaris), house sparrows (Passer domesticus), common grackles (Quiscalus quiscula) and Brown-headed cowbirds (Molothrus ater) were among the most dense species. The mean length-to-diameter ratio of the 12 species was 4.8 $\pm$ 0.3. Negative correlations ($P < 0.01$) were found between dry density ($N = 144$) and wingspan, dry circumference and body length. The percent of body mass represented by feathers differed ($P < 0.05$) among species, but not by sex ($P > 0.79$) or sex x species ($P > 0.15$).